

## Quantitative Typology using R

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Linguistic typology is a quantitative endeavor from the outset, using data from large numbers of different languages from all over the world. Still, the practical side of using quantitative methods is not very advanced in the field. In this course we will approach quantitative typology in a hands-on manner, directly applying various methods on actual data using the statistical environment "R".

We will first take some time to start to learn to use R. R is a very powerful 'machine', but it can be a bit intimidating at first. Further, we will investigate correlations between characteristics ('universals'), and various generalizations of such approaches (clustering, dimensionality reduction, regression). As a second topic we will also start to look into the analysis of semantic maps.

We will mainly be using the data from the World Atlas of Language Structure, and some subsidiary datasets to make semantic maps. When you have a concrete dataset from your own research that you would like to be discussed, please contact me at <cysouw@uni-marburg.de> in advance, so I can have a quick look at the data. I would very much like to use such data in this course, because I think that everybody can learn much more about the practice of quantitative typology when we have actual problems coming from actual research projects.

### Preparatory Reading

- Sections 1 & 2 of "Introducing R" <http://data.princeton.edu/R/>
- Some general acquaintance with the World Atlas of Language Structure <http://wals.info>

### Background Reading

Cysouw, Michael. 2005. Quantitative methods in typology, in: Gabriel Altmann, Reinhard Köhler & R. Piotrowski (eds.), *Quantitative Linguistics: An International Handbook*. 554-578. (Handbücher zur Sprach- und Kommunikationswissenschaft). Mouton de Gruyter: Berlin.

Cysouw, Michael. 2010. Dealing with diversity: towards an explanation of NP word order frequencies. *Linguistic Typology* 14(2). 253-287.

Cysouw, Michael. Forthcoming. Inducing semantic roles. In: Silvia Luraghi (ed.) *Semantic Roles and Semantic Maps*. Amsterdam: Benjamins.